

An apparatus for determining an error ratio of individual channels of a WDM optical signal comprises a wavelength-selective filter for separating the individual channels of the WDM signal and a measurement circuit for measuring an error ratio of one channel using a first decision threshold level. The measurement circuit is operable to cycle through all channels, taking an error ratio measurement for each channel in sequence with a predetermined decision threshold level. Control circuitry alters the decision threshold level for successive cycles of the measurement circuit.

10 The apparatus measures error ratio values for each channel in turn, building up an error ratio vs. threshold pattern enabling the Q value to be obtained. Although the time taken to build up the error ratio pattern for an individual channel is not shortened, measurements are taken on each channel at much shorter intervals. This means that signal degradations can be detected much more rapidly, as these signal degradations will be reflected in each error ratio measurement, and do not require a completely updated error ratio pattern to be
15 obtained.